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16. (Amended three times) The integrated circuit assembly of claim 15 wherein said substrate is selected from a group consisting of printable circuit boards, aluminum lead frames, and fine pitch ball grid arrays.

17. (Amended once) The integrated circuit assembly of claim 15 wherein said substrate comprises another integrated circuit.

18. (Amended once) The integrated circuit assembly of claim 15 wherein said bond wire material is selected from a group consisting of gold, silver, aluminum, and copper.

REMARKS

Claim 16 has been rejected under 35 USC 112(1) as containing subject matter not contained in the specification. Claim 16 has also been rejected under 35 USC 112(2) as being indefinite. Both rejections pertain to the use of the word "integrated circuit". Claims 15 and 16 have both been amended by replacing "second integrated circuit" with "substrate". Support for this limitation may be found in the specification at page 3 paragraph 0013. Withdrawal of the rejections under 35 USC 112 is respectfully requested.

Claims 11, 12 and 14 have been rejected under 35 USC 102(e) as being anticipated by U.S. patent no. 6,084,295 ("Horiuchi"). Claim 11 has been cancelled. Claim 12 has been rewritten in independent form, and 'printable circuit board' has been

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removed from the list of possible substrates. Claim 14 has also been rewritten in independent form, and silver bond wire is specified. Horiuchi does not disclose these limitations.

Claims 1-3 and 5-10 have been rejected under 35 USC 103(a) as being unpatentable over Horiuchi. However, independent claim 1 recites that the insulation on the bond wire is between approximately 0.2 and 0.6 micrometers in thickness. The Office Action states that determining the optimum thickness is a subject of routine experimentation. However, determining the optimum thickness is not the issue. The claimed thickness is so much smaller than the thickness in the reference (approximately one-tenth as thick) that different technologies may be required to produce it, technologies that may be incompatible or undesirable with the products of Horiuchi. Thus the use of these thin insulations represents a novel feature. The Office Action further states that the insulating differences between Horiuchi and the claim produce no functional differences. This is incorrect. The thinner insulation of the claim can produce a wire with smaller overall thickness (assuming the same thickness in the conductor), thus permitting more wires to be placed into the same amount of space. Alternately, the thinner insulation may permit a wire with a thicker conductor (and hence greater current-carrying ability) to be produced with the same overall thickness, thus permitting the same number of wires in the same space, but with greater current-carrying capability per wire. These are functional differences.

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Thus, the difference in insulation thickness between the claims and Horiuchi is not just a simple design choice with no functional significance, but a fundamental difference with measurable functional significance.

Claims 2-3, 5-7 depend from claim 1 and therefore contain the same limitations not disclosed or suggested by Horiuchi.

Claim 8 recites that two bond wires cross each other. Horiuchi does not disclose or suggest this. The drawings of Horiuchi (e.g., Figs. 1 and 4) show multiple wires extending from the integrated circuit 5 to a circuit board 10, but do not depict different wires crossing one another. Due to the visual perspective of Figs. 1 and 4, multiple wires are shown in the same plane above the integrated circuit, but the two dimensional nature of the drawings and the edge-on view of the aforementioned plane do not permit the viewer to determine how those wires are routed within that plane. Reference to the associated text does not suggest that the wires cross within that plane. Rather, the suggestion of the drawings and the text is that a top-view perspective would show that the individual wires do not cross each other. Any attempt to see crossing wires in the drawings or text of Horiuchi would require impermissible hindsight.

Claims 9 and 10 depend from claim 8 and therefore contain the same limitations not disclosed or suggested by the cited reference.

Claims 15-18 have been rejected under 35 USC 103(a) as being unpatentable over Horiuchi in view of U.S. patent 5,422,435 ("Takiar"). Claim 15 contains the same limitation on the thickness of the insulation as claim 1, and should be deemed allowable

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over the cited prior art for the same reasons. Takiar, which was cited only to show two integrated circuits connected by bond wires (a limitation now in claim 17), also does not disclose or suggest this limitation. Claims 16-18 depend from claim 15 and therefore contain the same limitations not disclosed or suggested by the cited references.

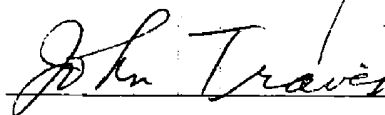
CONCLUSION

For the foregoing reasons, Applicant submits that claims 1-3, 5-12, 14-18 are now in condition for allowance, and indication of allowance by the Examiner is respectfully requested. If the Examiner has any questions concerning this application, he or she is requested to telephone the undersigned at the telephone number shown below as soon as possible. If any insufficiency of fees or overpayment is found, please charge any insufficiency or credit any overpayment to Deposit Account No. 02-2666.

Respectfully submitted,

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APPENDIX A

Marked-up version of amended claims

11. (Cancelled)

12. (Amended twice) [The integrated circuit assembly of claim 11] An integrated circuit assembly comprising:

an integrated circuit;

a substrate;

a bond wire connected to said integrated circuit and said substrate; and

a polymer insulating material coating said bond wire;

wherein said substrate is selected from a group consisting of [printable circuit boards,] aluminum lead frames[,] and fine pitch ball grid arrays.

✓ 14. (Amended twice) [The integrated circuit assembly of claim 11] An integrated circuit assembly comprising:

an integrated circuit;

a substrate;

a bond wire connected to said integrated circuit and said substrate; and

a polymer insulating material coating said bond wire;

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wherein said bond wire material comprises [is selected from a group consisting of gold,] silver[, aluminum, and copper].

15. (Amended twice) An integrated circuit assembly comprising:

[a first] an integrated circuit;

a substrate [second integrated circuit];

a bond wire connected to said [first] integrated circuit and said substrate [second integrated circuit]; and

an insulating material coating said bond wire to a thickness of between about .2 micrometers and about .6 micrometers.

16. (Amended three times) The integrated circuit assembly of claim 15 wherein said substrate [second integrated circuit] is selected from a group consisting of printable circuit boards, aluminum lead frames, and fine pitch ball grid arrays.

17. (Amended once) The integrated circuit assembly of claim 15 wherein said [insulating material is comprised of a polymer] substrate comprises another integrated circuit.